THE THREE SECRETS OF GREEN BUSINESS

UNLOCKING COMPETITIVE ADVANTAGE IN A LOW CARBON ECONOMY

GARETH KANE

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For a full list of publications please contact:

Earthscan
Dunstan House
14a St Cross St
London, EC1N 8XA, UK
Tel: +44 (0)20 7841 1930
Fax: +44 (0)20 7242 1474
Email: earthinfo@earthscan.co.uk
Web: **www.earthscan.co.uk**

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About the Author

Gareth Kane was born and brought up in Northern Ireland before moving to England to study engineering at Christ's College, Cambridge in the early 1990s. It was at college that he made his first steps down the environmental path, becoming a founding member of the Green Society and getting elected to the Student Union as Green Officer where he implemented a recycling system embedded into college life.

A couple of years after graduating, he found himself teaching English in Murmansk in the far north of Russia. A trip to nearby Monchegorsk was his first experience of massive ecological destruction – acid rain caused by the town's nickel smelter had wiped out life on the tundra for miles around. There and then he decided that his calling in life was to prevent such environmental damage.

On return to the UK he joined the 'Design for a Clean Environment' project at Newcastle University where he learned much of the theory behind the principles put forward in this book. He also gained an MPhil in the eco-design of large products such as ships and oil platforms.

His next move was to lead the new Clean Environment Management Centre (CLEMANCE) at the University of Teesside. Here he put the theory into practice, working with over 200 companies to improve their environmental performance. His biggest achievement was conceiving, planning and implementing the Tees Valley Industrial Symbiosis Project (TVISP). This was, and still is, one of the biggest environmental projects in the country, diverting over 150,000 tonnes of 'waste' away from landfill and into practical uses. The principles of Industrial Symbiosis (IS) are outlined in Chapter 5.

In 2004 Gareth was elected as a member of Newcastle City Council where he is Executive Support Member for Climate Change and Sustainability, a member of the Environmental & Sustainability Policy Group, sponsor of the Local Authority Carbon Management Programme and represents the council in a number of partnerships including the Newcastle Warm Zone, Newcastle Groundwork Partnership, the Association of North East Councils Climate

Change Task Group and Carbon Neutral North East. He put forward a motion to council to sign the Nottingham Declaration on Climate Change, triggering the development of a Climate Change Strategy.

In 2006 Gareth left CLEMANCE to set up a new business, Terra Infirma Ltd (www.terrainfirma.co.uk), which provides cutting-edge support to businesses to help them improve their environmental performance and their bottom line. Clients include the Department for Environment, Food and Rural Affairs (DEFRA) Sustainable Consumption and Production Programme, Envirowise, the European Union, Gentoo Housing Group, Stone Homes Ltd, Durham County Council and numerous others. He also comments on environmental issues for a number of websites, not least his own Sustainable Business Blog (www.terrainfirma.co.uk/blog.html) and Eco-living Blog (http://eco-living.blogspot.com).

Gareth has appeared as a media pundit on sustainability issues on the BBC 'Six O'Clock News', 'Countryfile' and 'The Politics Show'. In 2008 he was named as a 'Rising Star, Future Leader' by *The Journal* newspaper for his work on sustainability. He lives in Newcastle upon Tyne with his partner Karen, sons Harry and Jimmy, and Pip the Cat.

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This book would not have been written without the support of my family: Karen, Harry, Jimmy and Pip.

List of Acronyms and Abbreviations

ASA	Advertising Standards Agency
BOD/COD	Biological/Chemical Oxygen Demand
BRE	Building Research Establishment
BREEAM	BRE Environmental Assessment Method
CCS	Carbon Capture and Storage
CDM	Clean Development Mechanism
CFCs	chlorofluorocarbons
CFL	Compact Fluorescent Light
CLEMANCE	Clean Environment Management Centre
COD	Chemical Oxygen Demand
CoP	Coefficient of Performance
CSR	Corporate Social Responsibility
DEFRA	Department for Environment, Food and Rural Affairs
DETR	Department of the Environment, Transport and the Regions
DfT	Department for Transport
EMAS	Environmental Management and Audit System
EMS	Environmental Management System
FMCEA	Failure Mode Cause & Effect Analysis
FSC	Forest Stewardship Council
FTA	Fault Tree Analysis
GIS	Graphical Information System
GM	genetically modified
GSHP	Ground Source Heat Pumps
HAZOP	Hazard and Operability
HFCs	hydrofluorocarbons
HVAC	Heating, Ventilation and/or Air Conditioning
IEMA	Institute of Environmental Management and Assessment
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control

IS	Industrial Symbiosis
ISIE	International Society for Industrial Ecology
KPIs	Key Performance Indicators
LCA	Life Cycle Assessment
LEED	Leadership in Energy and Environmental Design
MJ	megajoule
MPG	miles per gallon
MSC	Marine Stewardship Council
NDAs	Non-Disclosure Agreements
NGO	non-governmental organization
NIMBY	Not In My Back Yard
NISP	National Industrial Symbiosis Programme
PFCs	perfluorocarbons
PV	photovoltaic
ROCs	Renewable Obligation Certificates
SS	Suspended Solids
SUDS	Sustainable Urban Drainage Systems
TNS	The Natural Step
TQM	Total Quality Management
TVISP	Tees Valley Industrial Symbiosis Project
W	watt
WEEE	Waste Electrical and Electronic Equipment
WRAP	Waste Resources Action Programme
WWF	World Wide Fund for Nature
WYGIWYN	What You Get Is What You Need

Introduction

Why write this book?

At the time of writing I have spent over a decade helping hundreds of businesses, public sector and not-for profit organizations to transform the environmental impact of their activities.

It has taken me all those years to accumulate all this knowledge and experience: there is no book or other publication that will take the reader through the practical process of delivering sustainability in a 'how to' manner. There is plenty of advice out there on environmental management (Chapter 3) and the 'small steps' that a company can take (Chapter 4), but it takes a lot of time to pull it all together. There are many books that debate the theory and examples of some of the 'huge leaps' described in Chapter 5, but nothing that knits them all together. What this book does for the first time is give you a practical roadmap from here to sustainability. The examples and tips in this book have been drawn from practical experience – they work.

How to use this book

This book is structured into five chapters:

- Chapter 1 Setting the Scene;
- Chapter 2 The Three Secrets of Green Business Success;
- Chapter 3 Preparing to Go Green: the groundwork required to make change happen in your organization;
- Chapter 4 Small Steps: the basic steps you should undertake to make your business leaner and greener;
- Chapter 5 Huge Leaps: the higher risk, higher reward strategies you can take to move towards a truly sustainable business.

If you want a truly green business, then you will need to read all five chapters in order. If you are simply looking for incremental improvements to your environmental performance then you will find Chapter 4 a useful reference guide, however you may need to refer back to Chapters 1 and 2 occasionally to understand the context.

Contents

List of Figures, Tables and Boxes

Figures

Tables

Boxes

Chapter 1

Setting the Scene

The Big Picture

A lonely planet

When the crew of Apollo 8 brought back pictures showing the Earth floating like a blue marble in the inky black darkness of space, ripples of consternation were felt across the world. The human race was faced with a stark reality: we live on a finite lump of rock spinning through empty space. Two things had become very clear:

1 Natural resources are not infinite.
2 If we exhaust those resources there is nowhere else to go.

It is important to remember these two basic facts. All too often 'the environment' is discussed in an abstract form as if it is an intangible entity like 'the arts', 'heritage' or 'tradition'. On the contrary, our environment is very real and we can't survive without it.

It is no exaggeration to say that our natural world is in crisis. Climate change has dominated the debate in recent years, but there are plenty of other pressing environmental concerns: the hole in the ozone layer, acid rain, accumulation of toxins in the food chain, loss of biodiversity, loss of topsoil, pollution of seas, lakes and rivers and the unsustainable exploitation of renewable, but depletable, resources such as forests, fish stocks and fresh water.

The facts are staggering. If the population of the whole world were to live like citizens of the UK, we would need three planets to support that lifestyle. If we all lived like the average US citizen, we'd need five.[1] We only have one. It is only the poverty in which the majority of humankind lives that stops the planet giving up the ghost right now. But with the economies of India and China booming, it is imperative that something is done to make human life on Earth sustainable.

What is an environmental impact?

This is quite a difficult question from a philosophical point of view. Many of our most dramatic landscapes around the world have been shaped by human activity. Identifying what constitutes a negative effect on the natural world is a subjective choice.

From a technical point of view, the following model is generally accepted as the standard definition of an environmental impact. There must be a source of a problem (often the release of a pollutant), a receptor (something to be damaged) and a pathway to connect the two (see Figure 1.1).

This is very simple and it gives us the range of techniques to stop the impact happening – you simply have to remove one of the three components:

- Removing the receptor is the most difficult of the three options and is often impossible. A common example is moving a colony of rare amphibians in the path of a new road. Obviously you can't do this for global environmental problems.
- Removing the pathway means preventing the problem reaching the receptor by a physical barrier (e.g. a filter or an impermeable material) or by transforming the pollutant en route (e.g. by chemical, physical or biological treatment).
- Removing the source removes the problem. In practice this strategy most often works best and costs least. It is the one that will be pursued almost exclusively in this book.

Figure 1.1 The technical definition of an environmental impact